

Dimac mcv6 Sorting Machine: The New Era of Defect Detection

The Dimac mcv6 is a cutting-edge automatic sorting machine designed for high productivity and maximum flexibility in handling flat metal parts.

The mcv6 usually operates on a 900mm glass table with continuous motion, allowing for efficient sorting of **flat metal components**. Equipped with optical and NDT (non-destructive testing) stations, the mcv6 can identify a variety of defects including dimensional defects, cracks, inner thread issues, and surface imperfections.

With the innovative multi-camera station and Top camera with AI tools, the mcv6 stands out in the field of quality control and inspection.

Multi-camera Station with AI: for 360° Inspection of Lateral Surfaces in flat parts

The multi-camera station with artificial intelligence is designed to respond to a request that the market has been asking for a long time: **a 360° control on a glass table sorting machine**.

Despite an image capture technology that was not particularly complex, the multi-camera station has never found large areas of application before, for two reasons: the surface image analysis software did not meet expectations and the difficulty of obtaining homogeneous lighting.

The gap between expectations and technical possibilities is filled with the introduction of artificial intelligence in the analysis process of surface images, a tool with incomparable power compared to previous solutions. ("La Mille" sorting machine).

Furthermore, thanks to improvements of mechanics, PCs, cameras and lights, the stability of the image acquired on the glass table has increased even at higher speeds, effectively overcoming the second obstacle.

The multi-camera station combined with AI enhances the machine's ability to detect previously undetectable flaws. This state-of-the-art feature enables comprehensive 360° inspection of lateral surfaces. The control station comprises four cameras positioned at 90° angles around the part, capturing images from multiple perspectives. This setup ensures thorough visualization of the piece's side surfaces.



CASE STUDY



SIDE DEFECT ON PINION



MULTI-CAMERA / AI SOFTWARE VIEW

Innovative AI Tools

At the heart of the mcv6 inspection capabilities is the Dimac AI Tool software. This sophisticated software utilizes advanced algorithms to **analyze images captured by the multi-camera control station**. It also can work with the **Top camera control station**, to detect defects on the top surface of the parts.

Unlike traditional vision systems that depend on predefined rules, the AI tool learns through a neural network that assesses image similarity. It classifies defects such as cracks, scratches, lack of material, and molding defects with unmatched precision and speed.

The training of the AI tool is conducted by Dimac experts who provide tailored services, refining and validating the neural network before it is installed on the sorting machine. This ensures that the system is finely tuned to meet specific inspection requirements maximizing productivity.



MOLDING DEFECT ON CAR PARKING SENSOR CAPS

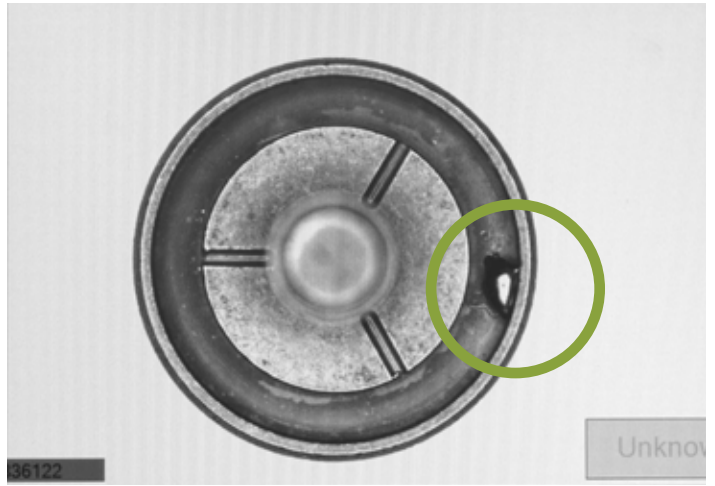
Versatile Applications

The applications of the mcv6 with multi-camera CS and AI tools are various. Some interesting examples are: **car parking sensor caps, nickel plates, pinions, demonstrating its versatility across different manufacturing processes.**

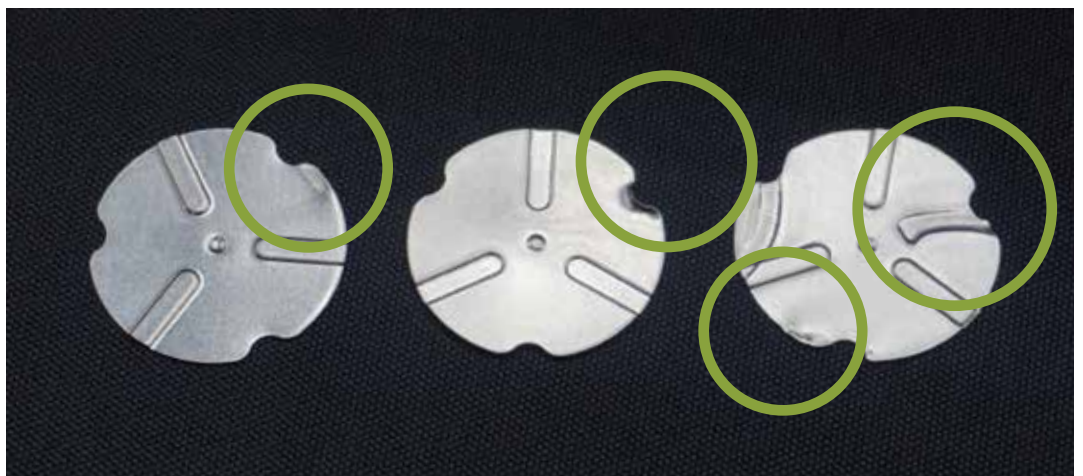
CASE STUDY



DEFECT ON INNER SIDE
OF THE FLANGE



AI TOOLS SOFTWARE VIEW



MOLDING DEFECT ON NICKEL PLATES



MOLDING DEFECT ON METAL PARTS

Conclusion

The Dimac mcv6 sorting machine, with its innovative multi-camera station and AI tools, represents a significant advancement in the detection of defects in flat metal parts. Its combination of high productivity, flexibility, and cutting-edge technology ensures that manufacturers can maintain high quality standards while optimizing their sorting processes.